

Response to Information Request: Gasco Capture Zone Test Data Summary

John Edwards

to:

Dana Bayuk, Sean Sheldrake

02/02/2011 04:11 PM

Cc:

PetersonLE, "John Edwards", "John Renda", "Wyatt, Robert", "Patty Dost", "Carl Stivers", "Ryan Barth", "Michael Riley", "Ben Hung", MDCrystal, "T McCue", "James Peale", "Gladstone, Alan"

Show Details

Hello Sean and Dana. This information is provided to answer DEQ's request for further information on the Segment 2 Capture Zone Test, Data Summary Memorandum (January 17, 2011). DEQ's request is reproduced in the text below and the responses are shown in italic font.

Please let us know if you need further information prior to the next deliverable date of March 14, 2010.

Thanks

John

DEQ checked the "Segment 2 Capture Zone Test, Data Summary Memorandum" (Data Summary) dated January 17, 2011 for completeness, and determined the document provides the information items we requested in our January 14th e-mail with the exception of:

- 1) NW Natural's initial interpretation regarding how pumping test wells in the alluvial water-bearing zone (WBZ) influences groundwater in the fill WBZ;

In the area of the Segment 2 Test, groundwater in the fill appears to be perched. During testing of the extraction wells groundwater levels in the fill were not significantly affected.

- 2) time versus drawdown plots.

Time versus elevation plots were provided in the excel spreadsheets. As discussed in the memo, the Serfes 72-hour moving average method was used to evaluate the data. Because we used the Serfes average elevation method, we did not need to plot drawdown to assess offshore capture. To prepare time vs drawdown plots, the data would have to be corrected for tidal influences and time lag.

NW Natural should provide the initial interpretation as agreed to, including references to the specific installations and data trends from the fill WBZ and alluvial WBZ used to support the interpretation. Because data is provided in spreadsheets which DEQ can use to generate time/drawdown graphs, we aren't requesting NW Natural to provide this information.

In addition, DEQ has the following comments and questions regarding the tables, spreadsheets, and data plots.

- DEQ requests NW Natural to confirm our understanding that the discharges shown in Table 1 represent the total extraction rates for each test. For example, we understand the total discharge for first test shown in the table (i.e., "2-hour Pump Test – 15 gpm") is 15 gpm which is evenly split between the three referenced test wells (i.e., each well was pumped at 5 gpm for 2 hours).

DEQ's understanding is not correct concerning the total discharge for the pump tests. The pumping rate was not split between wells and for the tests, each well was pumped at 15 gpm, 25 gpm, and 35 gpm. The total pumping rates were 45 gpm, 75 gpm, 105 gpm for these tests. The final pump test which included PW-8-39 used a pumping rate of 25 gpm for each well except PW-8-39 which was pumped at 2 gpm.

- A key to the tabs in the file named "Segment 2_All Wells 72hour test 1min111510.xls" would assist in understanding the content of the data files and plots. For example, the file includes tabs labeled WLE Chart_all, WLE Chart_all(2), and WLE Chart_all (3). Except of WLE Chart_all(2) which is blank, it is unclear how the data and plots differ. This comment also applies to the series of tabs in the file labeled "Temp Chart_all..."

The intent was to provide DEQ and EPA with the tabulated data and time vs. elevation plots. These files also contain many working tabs used to increase screen resolution and to add and remove wells during our internal evaluation. These working tabs are not designed to display a specific feature, but rather as a working canvas used for changing scale without changing the "WLE Chart_all" tab each time we looked at the data. The primary tabs are as follows:

"temp" = temperature at each location in degrees Celsius

"DTW" = depth to water at each location below top of casing

"WLE" = water level elevation at each location (DTW measurements converted to City of Portland datum)

"WLE Chart_all" = time versus elevation plots for all monitored locations

"Temp Chart_all" = time versus temperature elevation plots for all monitored location

- The file named "Segment 2_All Wells 72hour test 1min111510.xls" has a tab labeled "TempChart_all (2)" which includes two vertical axes one of which is not labeled. The axis should be labeled or removed.

This tab is one of the "working files" as described above. The Willamette River water level was added to help evaluate change in temperature with change in river level. The second axis is the elevation in COP datum for that one data set.

- DEQ presumes the water level and/or temperature and time plots include only the wells with data shown in the spreadsheet and not data from all of the wells shown in the margin (see filename "Segment 2_PW-8-38 2gpm 72hour test 1min-091210.xls" for examples).

Correct. All the formulas are in the plot, but the data is not entered into the spreadsheet, so no line is plotted for those wells. For this test, only selected nearby wells were observed because at a low pumping rate of 2 gpm, we did not expect the drawdown cone to extend very far from this shallow PW-8-38 pumping well.

NW Natural should provide the information requested in this e-mail, including addressing DEQ's comments and questions listed above in a reply to this e-mail. DEQ expects the information to be provided on or before Friday February 4th.

Let me know if you have questions regarding this e-mail.

Mr. Dana Bayuk, Project Manager

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From: John Edwards [<mailto:jedwards@anchoragea.com>]

Sent: Thursday, January 20, 2011 6:23 PM

To: Sheldrake.Sean@epamail.epa.gov; BAYUK Dana

Cc: John Edwards; John Renda; Wyatt, Robert; Patty Dost; Carl Stivers; Ryan Barth; Michael Riley; Ben Hung; PetersonLE@cdm.com; Mike Crystal; T McCue; James Peale; Gladstone, Alan

Subject: FW: Gasco Memo fix

Hello Sean and Dana. Attached is a PDF of a memo and data summary of the Gasco Segment 2 Capture Zone field work completed to date. Tomorrow we are sending a CD containing everything in the PDF, plus the raw hydrology data files, hydrographs and temperature trend plots. The attached PDF is a compressed file, so the quality is not quite as good as on the CD.

Please let me know if you have trouble viewing this material or have questions.

John

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